

Post Quartermaster's Office.
Fort Huachuca, Ariz., Feby. 16, 1884.

Chief Quartermaster.

Department of Arizona.

Prescott, Ariz.

To the Commanding Officer, Fort Huachuca.—

Sir:

I have the honor to forward herewith, new estimate, in triplicate, (with facsimile of plans in duplicate) of the materials of all kinds and labor, required to furnish a water supply for the post; - prepared in accordance with the views of Captain A.R. Shaffee, 6th Cavalry Post Commander, and the recommendations of Engineer Officer, Dept. of Arizona, as per his communication of January 21, 1884; with this difference - that Capt. Shaffee adheres to the plan first proposed by him to lay the supply pipes in rear of the row of officers' quarters, and not in front - the connections to introduce water into the buildings, and the pipes in the houses, having been laid before the papers were received back from

Department Headquarters, so that now there is no alternative but to lay the pipes in the rear. There are also a few unimportant modifications in the pipe fittings, which the plan will explain.

There is, however, considerable difference in the plan of reservoir proposed by Capt. Schaffee and that of the Engineer Officer. The one will cost \$3,784⁰⁰ for a double reservoir of 184,000 gallons capacity, and the other \$10,618⁰⁰ for a double reservoir of 350,000 gallons capacity, perical fides.

At present it is proposed - and the estimate is made in accordance with this view - to build a reservoir of one basin only, if the money available not admit of the construction of a double-basin reservoir; the latter, however, is recommended, if the funds can be obtained.

If a double-basin shall be authorized, the second basin will be constructed as shown in plan without other cost than the cost of the basin itself, as the connections will be made and pipe laid when the first is being built.

Very respectfully, your obedient servant

S. A. Gage
Asst. Quartermaster, U.S.A.

(13 Encd.)

50/1884.

- 1st Endorsement.

Fort Huachuca, A.T.

Feb^r. 18th 1884.

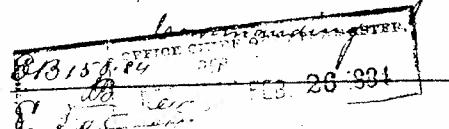
Respectfully forwarded, through Department Headquarters, we have endeavored to conform to the views of the Department Engineer Officer, as near as possible, in the preparation of the estimates, herewith. It will be observed that Genl Bingham did not show, on the Plan made by him, the manner he would connect the buildings with the mains. In doing this we have exercised our best judgment and it results in a few unimportant changes from his estimate with respect to pipe fittings. In order that the matter may be thoroughly understood and the necessity for the fittings called for, etc., I have caused a plan to be made, representing as far as possible all connections.

As stated within, it is too late to adopt the suggestion of the Department Engineer Officer and lay the main in front of Officer's line. To save time, labor and the marring of the quarters when finished, the plumbing was done as soon as the walls were completed - Everything made ready to connect, on the outside of the quarters and in rear of them. To now lay the pipe in front angles and then laid with very great care will require an expenditure of about \$800 we understand if such work requires 60 feet of pipe per set of quarters in addition still on the part of the masons and especially a thoroughly competent man to oversee the work. The specifications of Leut Bingham call for vertical sides but do not reduce the surface area. Vertical sides double the amount of excavation and the capacity also. With slanted sides, the surface area could be greatly reduced and still afford ample storage capacity. An estimate is submitted based on the specifications of Leut Bingham's full surface area. A careful

consideration of the subject, leads me to propose the basin reservoir, it being somewhat cheaper. With sloping sides as proposed, the concrete will lay well and four inches thick is sufficient. The surface and 41 feet on the bottom ^{double} lining one foot thick necessary. If funds can be obtained for the construction of a reservoir with vertical sides, increase the cost over one of sloping sides, with 4 inches, it is proposed to cap or ^{salt} about two thirds of one cent per gallon "K", so that when the second basin is completed. A Reservoir 20 x 40' by 15 feet deep, vertical sides, would require at no expense and with little labor, nearly equal in capacity - the one now estimated for pipe and fittings estimated for: 44' x 48' by 12 feet deep (Reduced 2" to 1" and Pakut Union") with sloping sides. The cost of the former I desire to ask especial attention to, with would be \$350 more than the latter. This a view to obtain immediately 12 of each. difference in cost is ~~over~~ reason for estimating by transfer from some just where they may be for a basin form of reservoir. To obtain on hand and not required for immediate the construction of a division wall, which, as use, or if not on hand I request immediate will be seen by reference to the estimates, is furniture - With these two items (12 of each) very expensive,) in case a double reservoir furnished, we can put water into the new is decided on, we propose to excavate a ^{second} basin immediately from a small opening second basin, in all respects like ^{the} one near the pool, which affords sufficient water for herewith proposed, and five feet ^{and} from the line of the first, leaving the natural rock in place to form a division wall which would be five feet on the

house purposes. The line of pipe at
near ... Officers Quarters could be laid and
would not be required to be taken up to
connect with reservoir when built, except
from "Hospital" to "C". I assume that
a year or more will elapse before water can
be brought to the post as proposed in the
permanent plan of supply. By making
temporary connections with the small
spigot the water wagon can be laid up.
Will the Chief Quartermaster please inform
me as soon as possible, whether the two
items mentioned can be supplied immediately,
as requested, in order that the trench for the
pipe may be dug and everything made
ready to lay the pipe when the
fittings arrive, if they can be furnished.

A. M. Bruffee
Captain 6th Cavalry.



(2d ENDORSEMENT.)
HEADQUARTERS DEPARTMENT OF ARIZONA,
OFFICE OF THE CHIEF QUARTERMASTER,
WHIPPLE BARRACKS,

Prescott, A. T., Feb'y 26 1884
Respectfully returned to
the Ass't Adj't General of the
Department, with recommendation
that these papers be reper-
fined to Lt. Col. Bingham,
Regular Officers of the Deptt.,
for any remarks or suggestions
he may see fit to offer in con-
nection with the revision of
the head estimates.

J. W. Gage
Quartermaster, U. S. A.,
Chief Quartermaster.

3343/83 and Subs 3, 6, 7 & 8
Received, & Subs

3rd
1884
referred
Engineering Officer
17th may
Remarks or suggestions
you may advise to make.

Theo. A. Brigham
President of Engineers
Eng. Off. of Dept.

5th

March 5
returned
Chief Geodesist

enclosing at
Section to the preceding
endorsement and enc-
close up thereof.

J. W. Lester

E. S. 122.
466
Architect
11 MAR 11 1884

4th Endorsement

ENGINEER OFFICE

Headquarters Department of War

Washington, D. C., March 6, 1884.

S. P. [unclear] returned to the

Engineering Department
recommendations & drawings herewith
marked "Z".

It is requested that
the former recommu-
nations & drawings

(6) Endorsement)
HEADQUARTERS DEPARTMENT OF ARIZONA
Office of the Chief Quartermaster,
WHIPPLE BARRACKS,

Prescott, A. T. March 25, 1884

Respectfully returned to
the Ass't Adj't. General of the
Dept., recommending approval
in accordance with the recom-
mendations of the Engineer
Officer hereon. All previous
plans and Estimates, to avoid
confusion have been with-
drawn. It is very desirable
if possible that the pipe
and fittings be supplied
before the close of the
fiscal year, but as it will
not be feasible to construct the
reservoir this year, the plans
therefor and the fix material
should be supplied from next year's
appropriation.

466
1884

John C. Bowditch
Quartermaster, U. S. A.
Chief Quartermaster

37th

Approved as recommended in the 1st recom-
mendation.

Wm. D. Bent

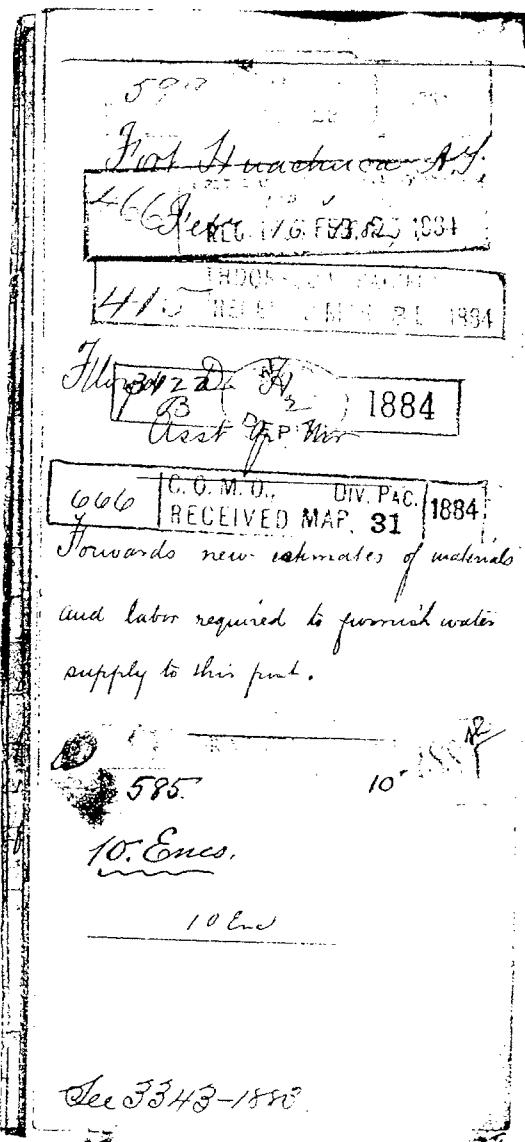
E. 8164.
J. E.

8th
HEADQUARTERS DIVISION OF THE PACIFIC,
San Francisco, Calif., March 31, 1884
Respectfully referred to the
Quartermaster General of the Army,
Washington, D. C.

J. Kellogg

[^{9th Endorsement}]
CHIEF QUARTERMASTER'S OFFICE,
DIVISION OF THE PACIFIC,
Presidio of S. F., Cal., April 24, 1884
Respectfully forwarded to the
Quartermaster General of the Army,
Washington, D. C.

J. D. Meekham
Col. Asst. Q. M. General,
Chief Quartermaster,
666
1884



REPRODUCED AT THE NATIONAL ARCHIVES